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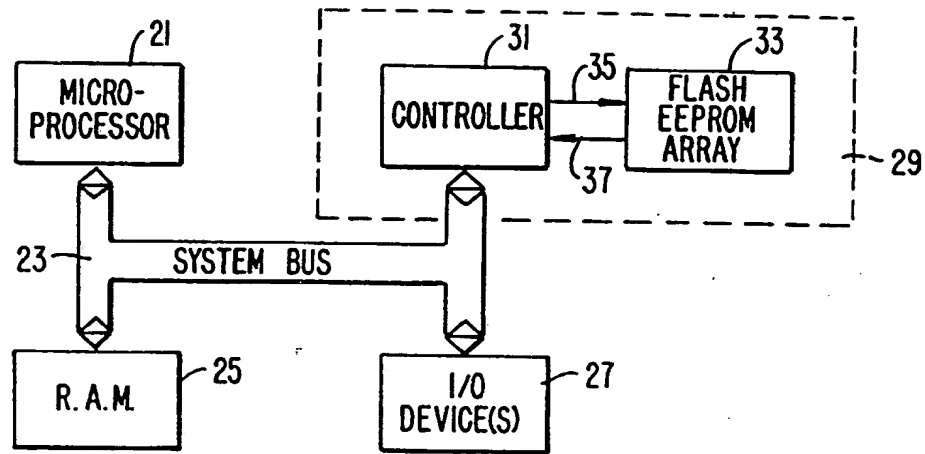


FIG. 1A

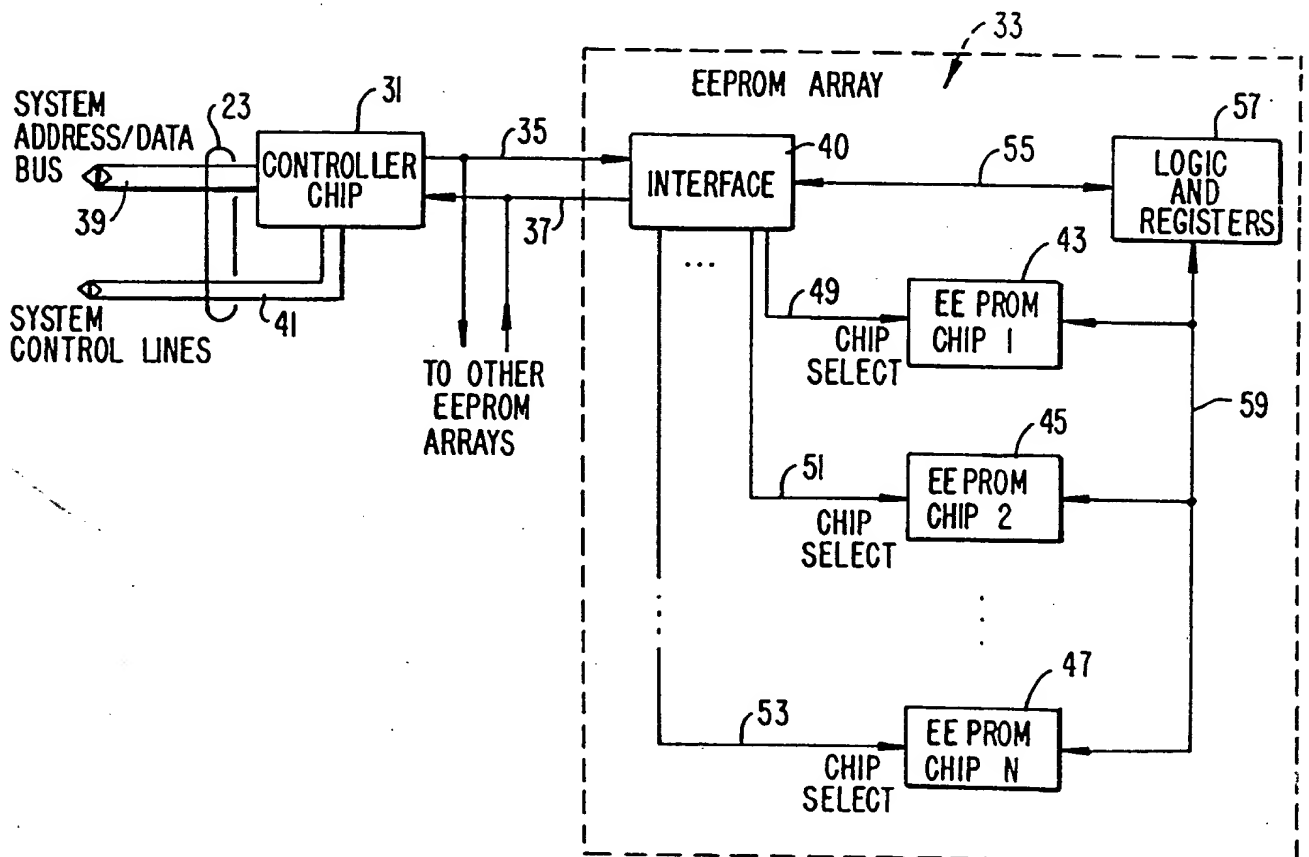


FIG. 1B



APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
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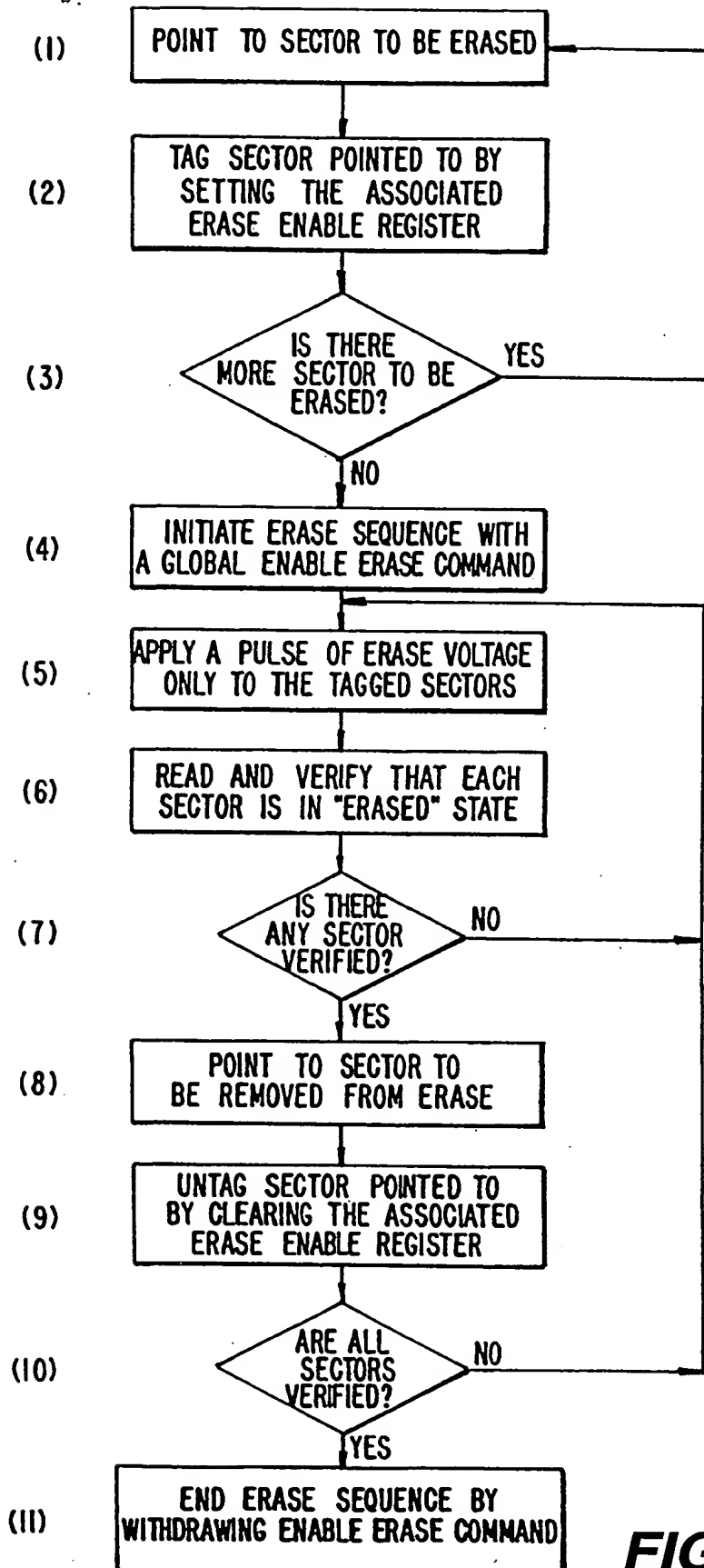


FIG..4

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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FIG. 5

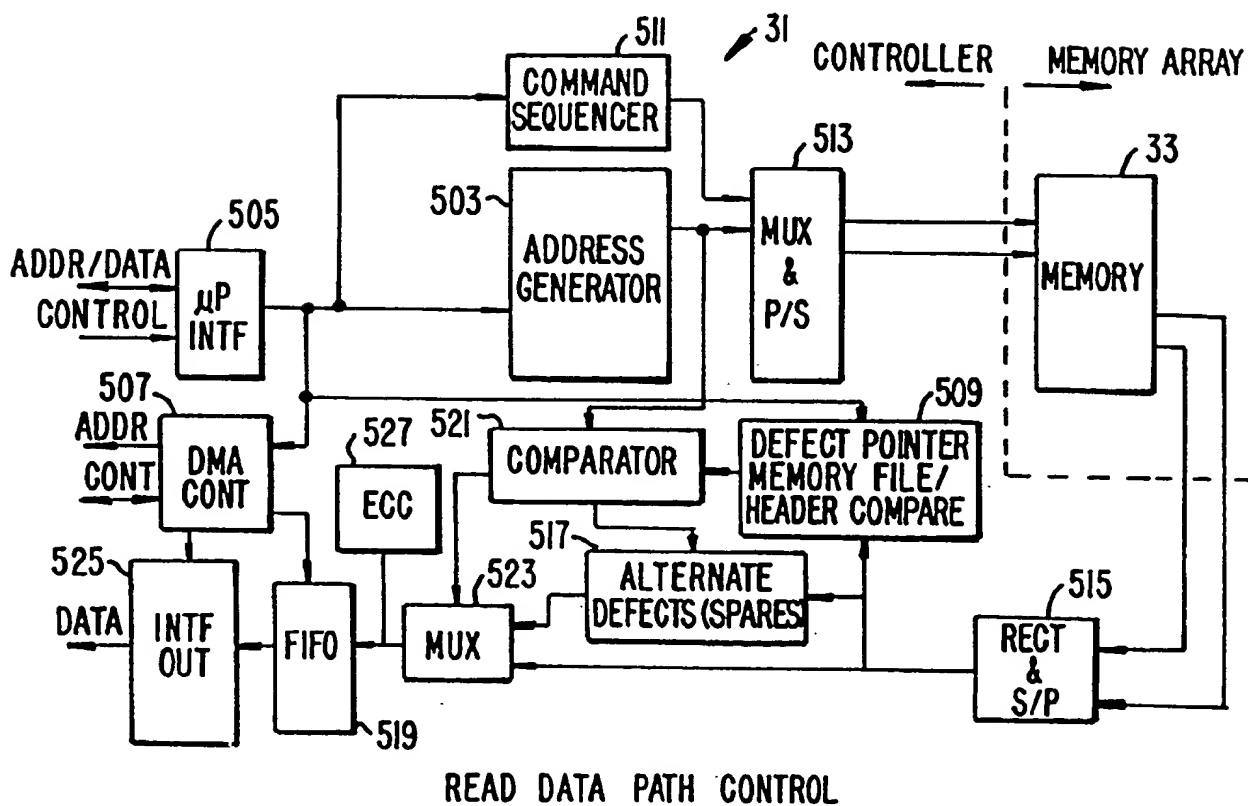
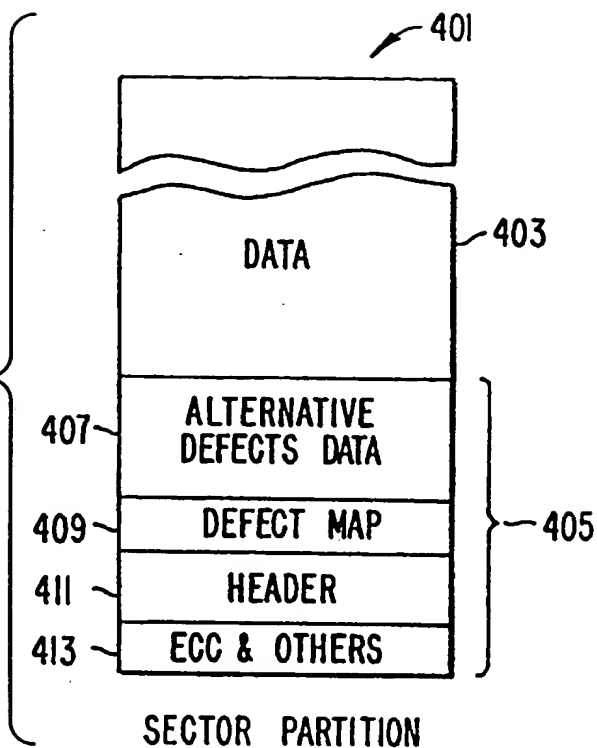
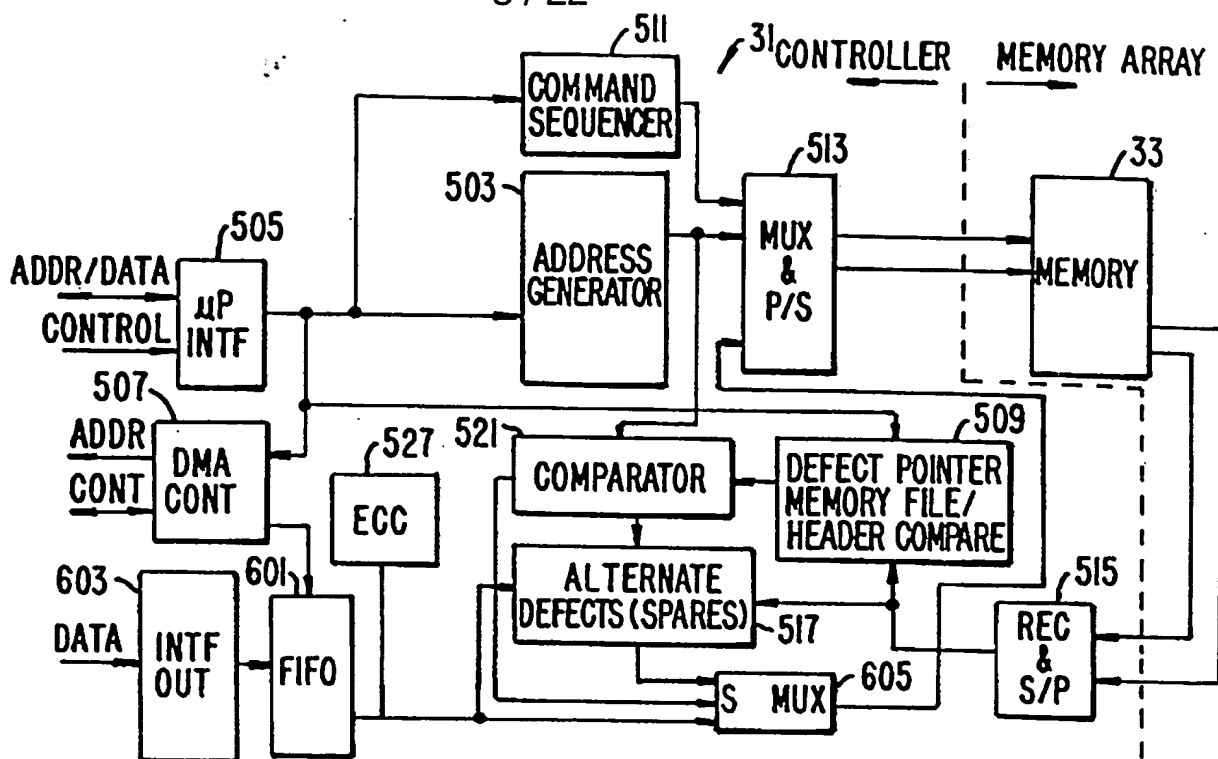


FIG. 6

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WRITE DATA PATH CONTROL

FIG. 7

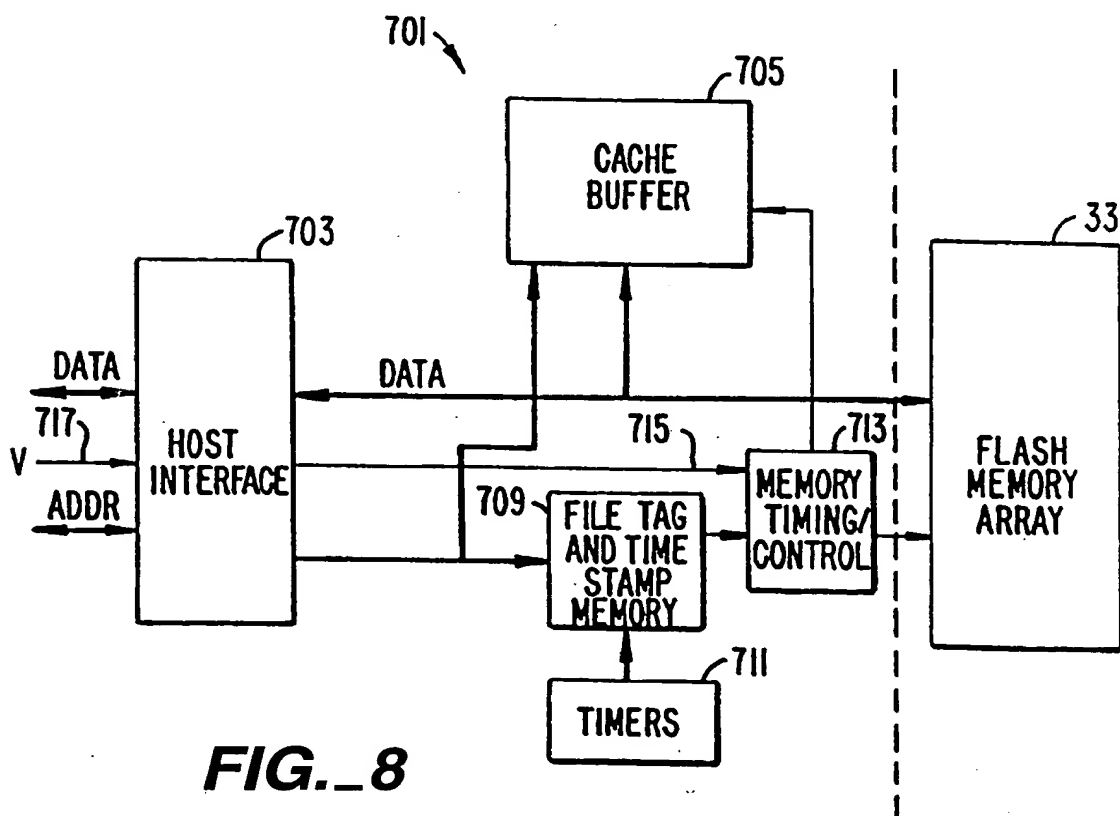


FIG. 8

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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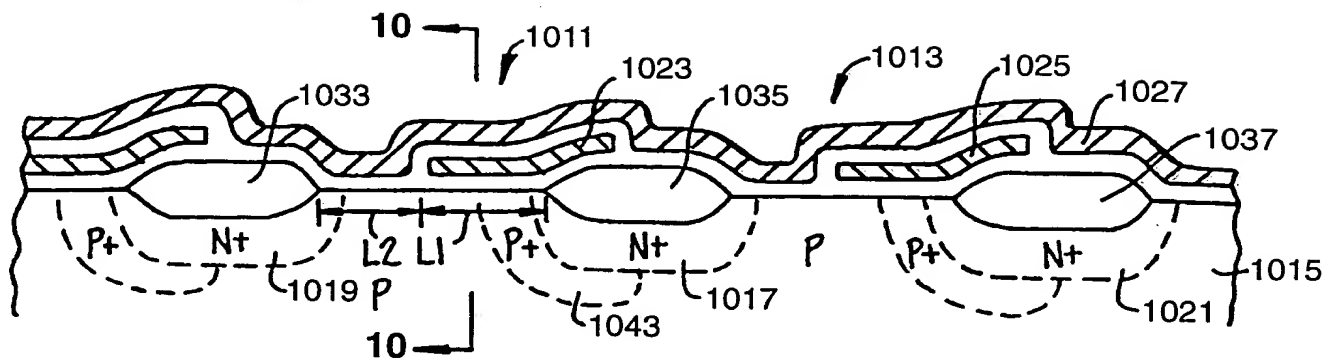


FIG. 9

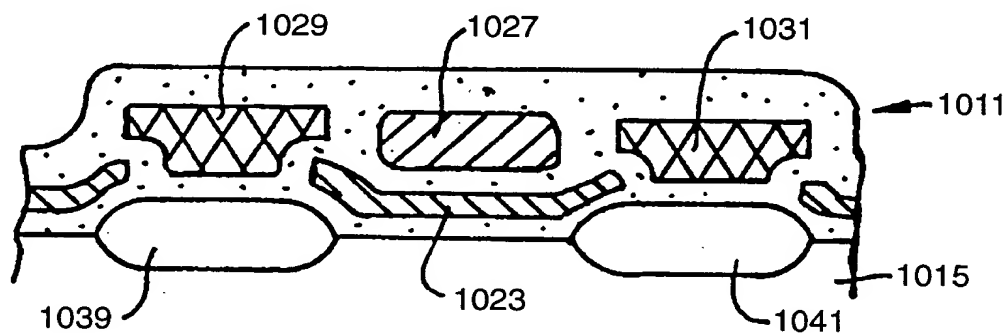


FIG. 10

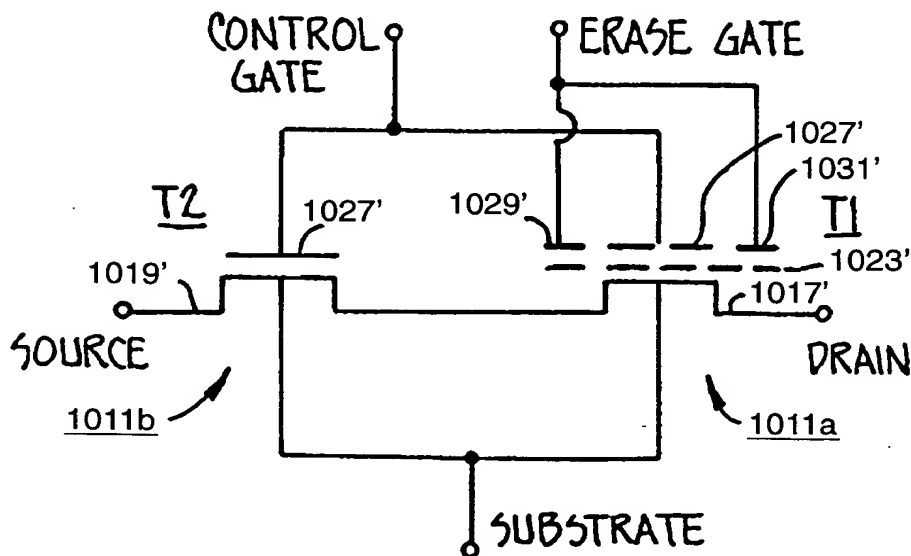


FIG. 11

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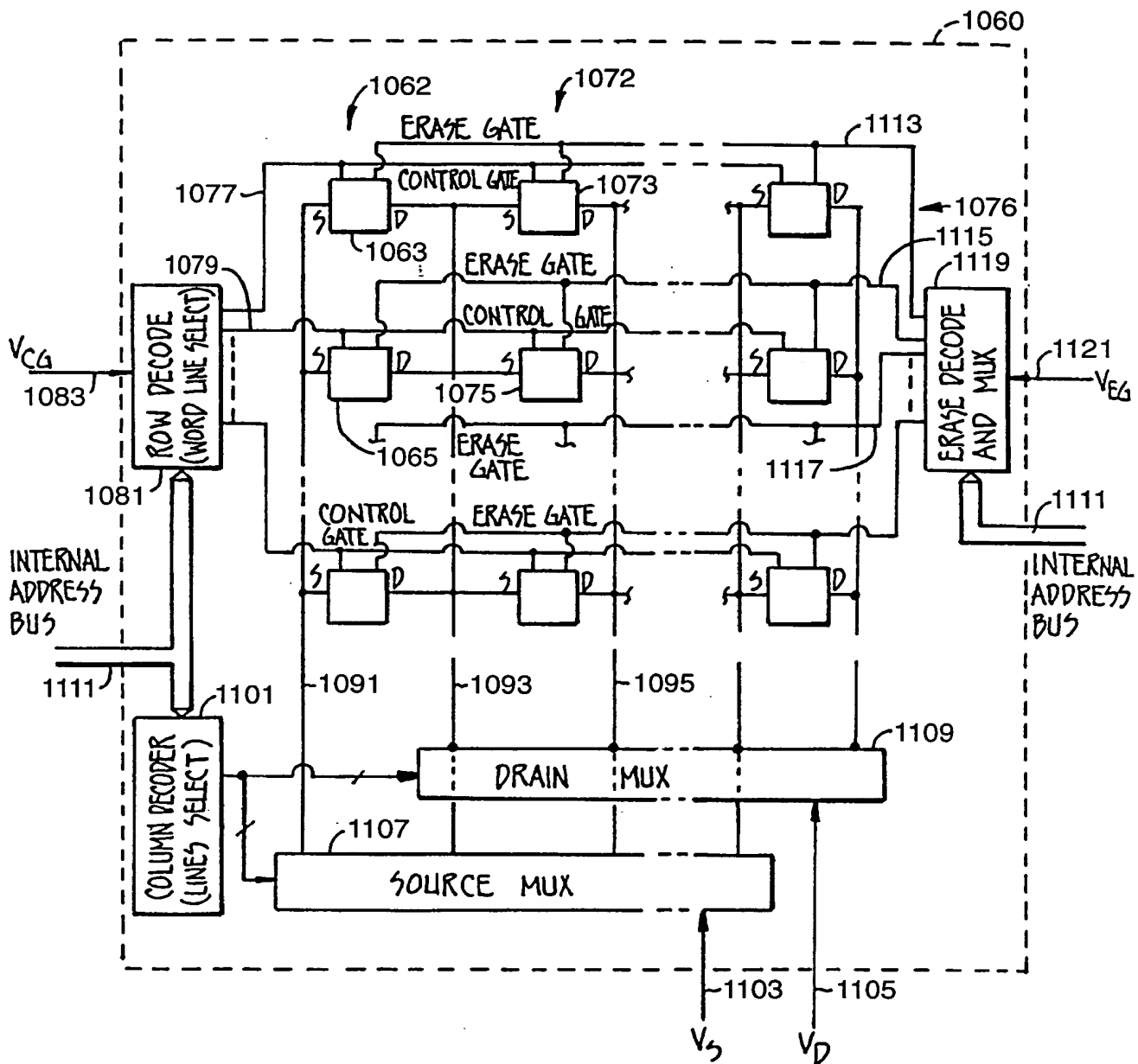


FIG. 12

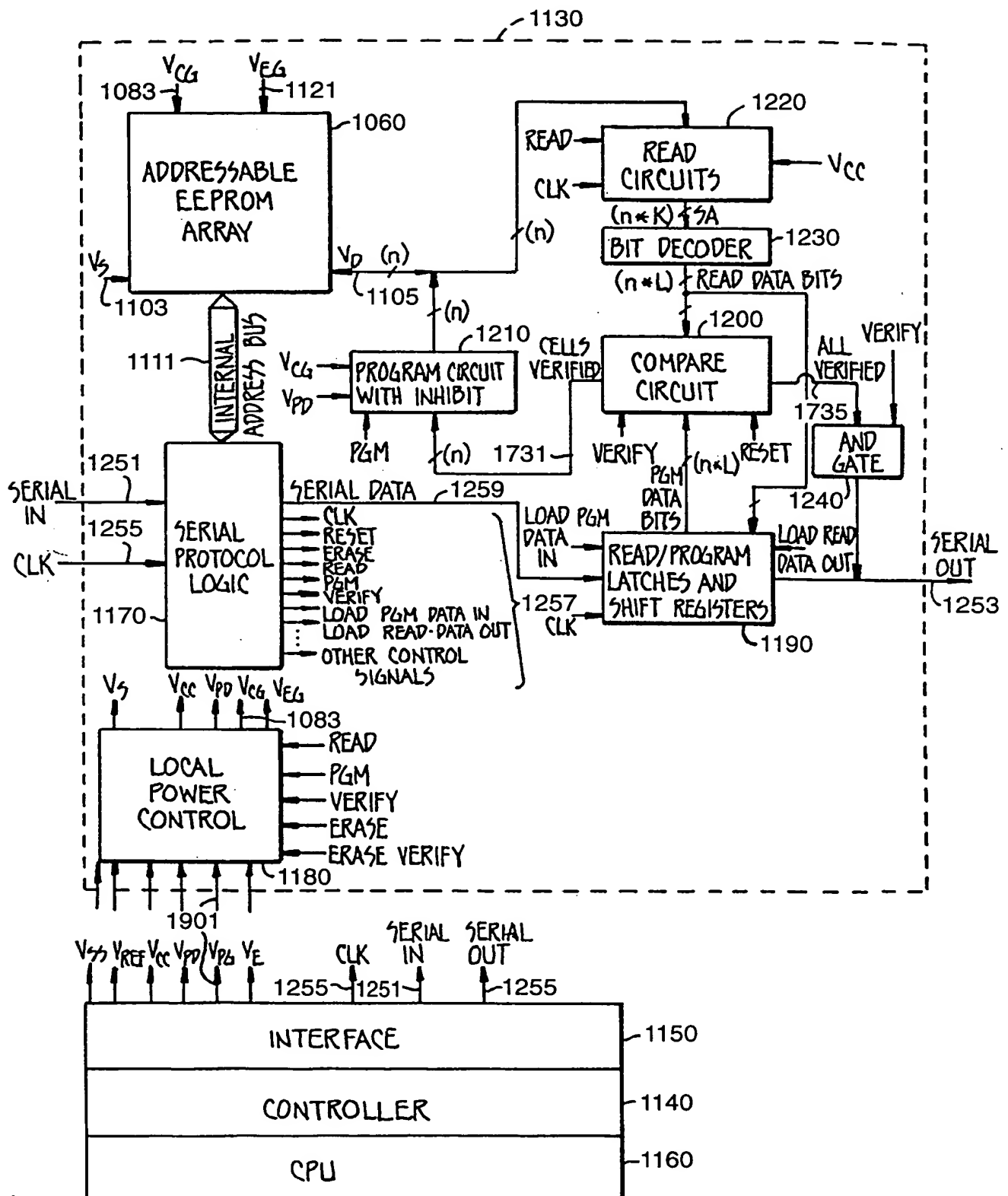


FIG. 13

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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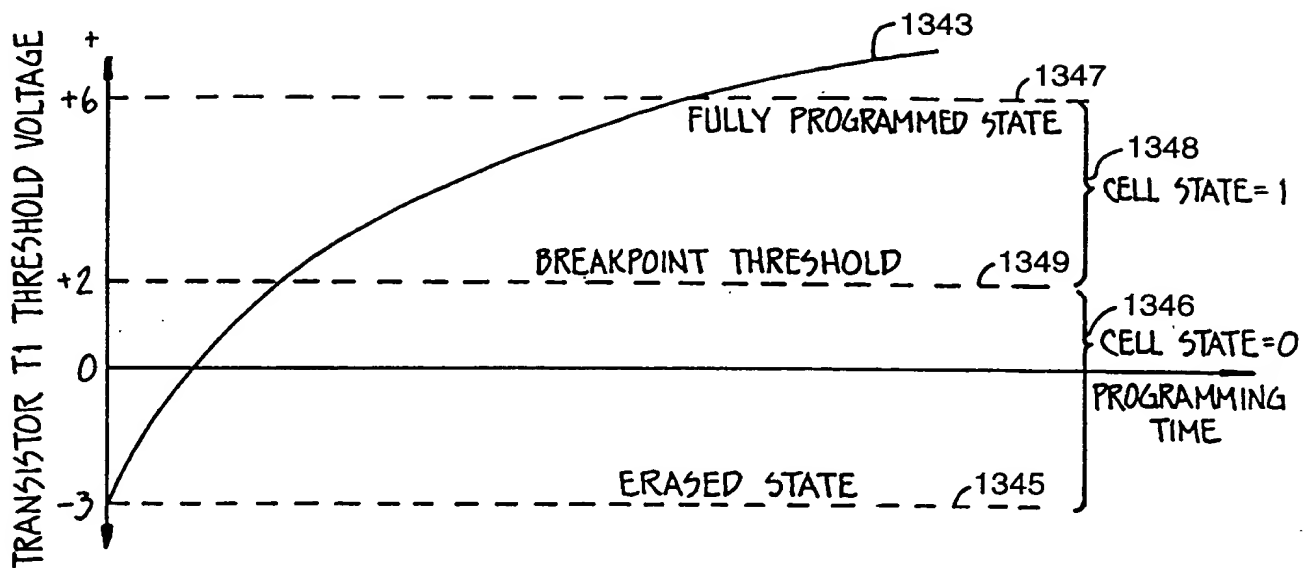


FIG. 14

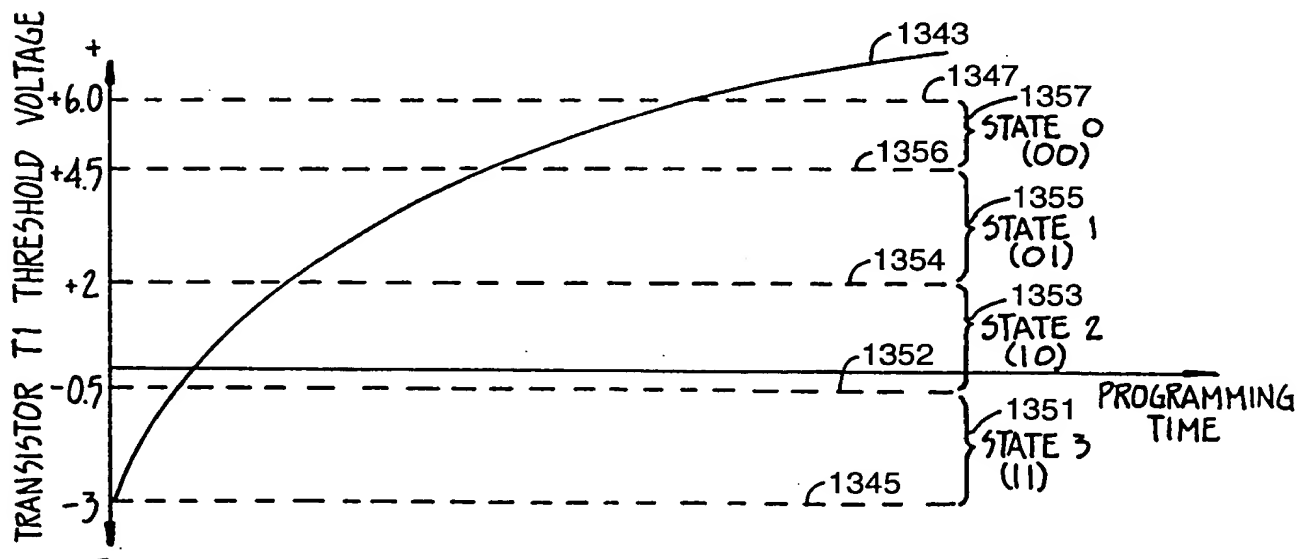


FIG. 15A

APPROVED	D.G. FIG.	
BY	CLASS	SUBCLASS
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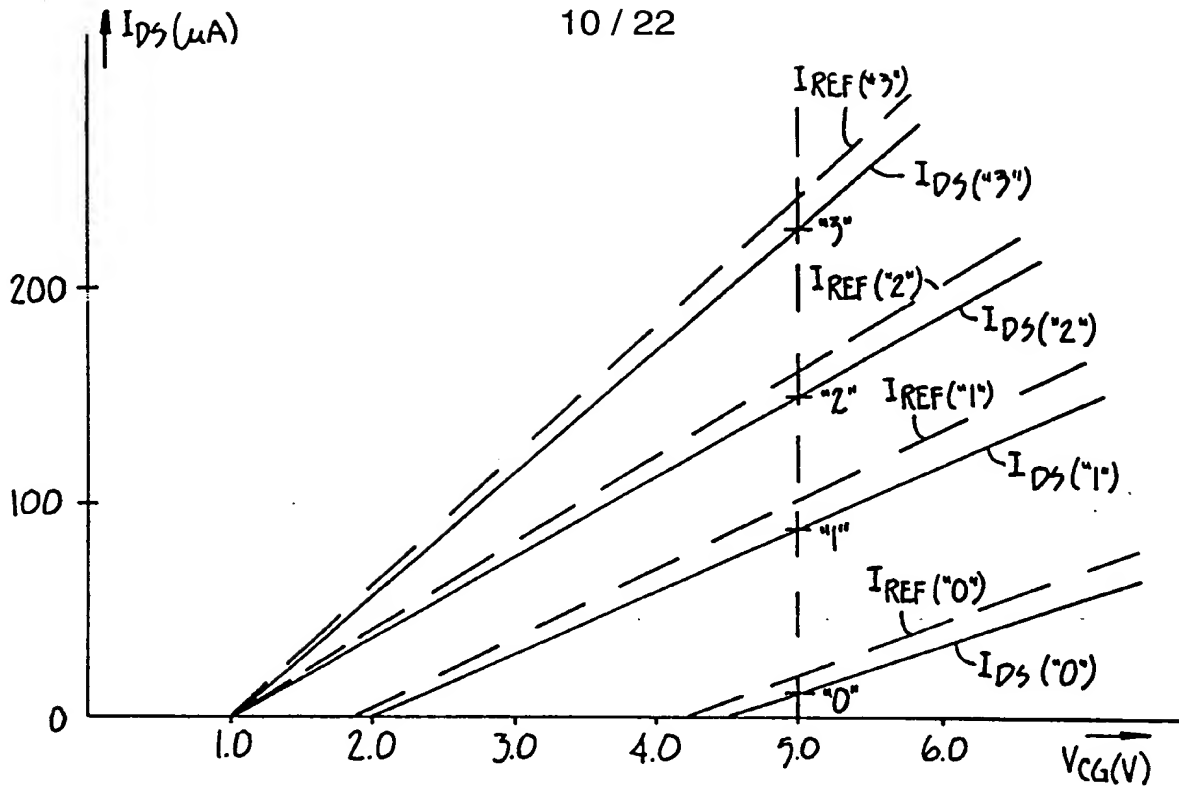


FIG._15B

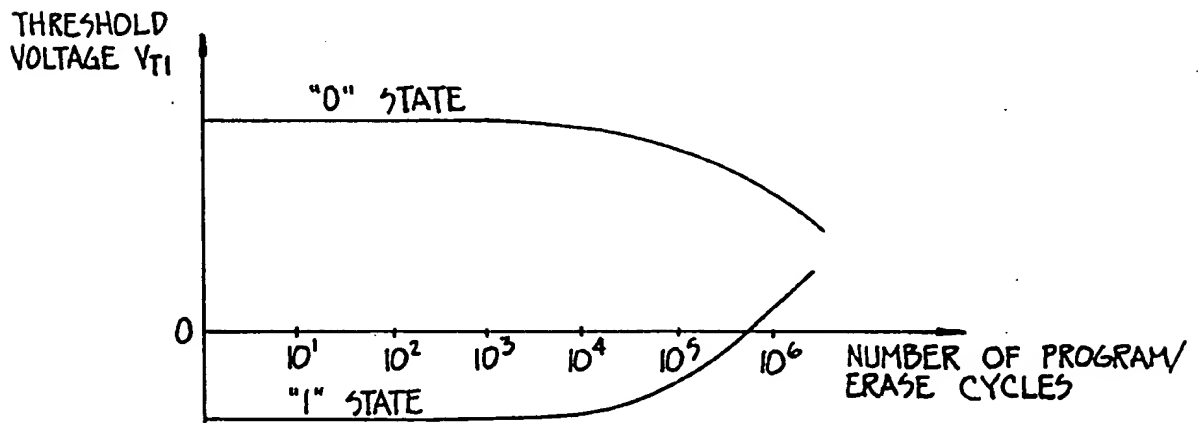


FIG._16A

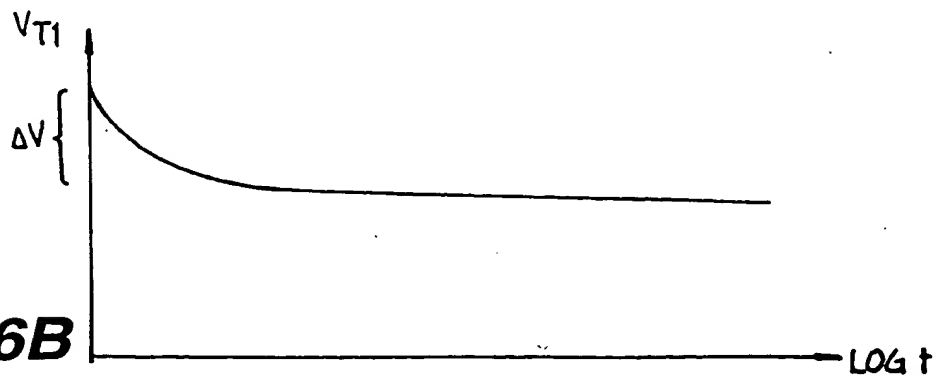


FIG._16B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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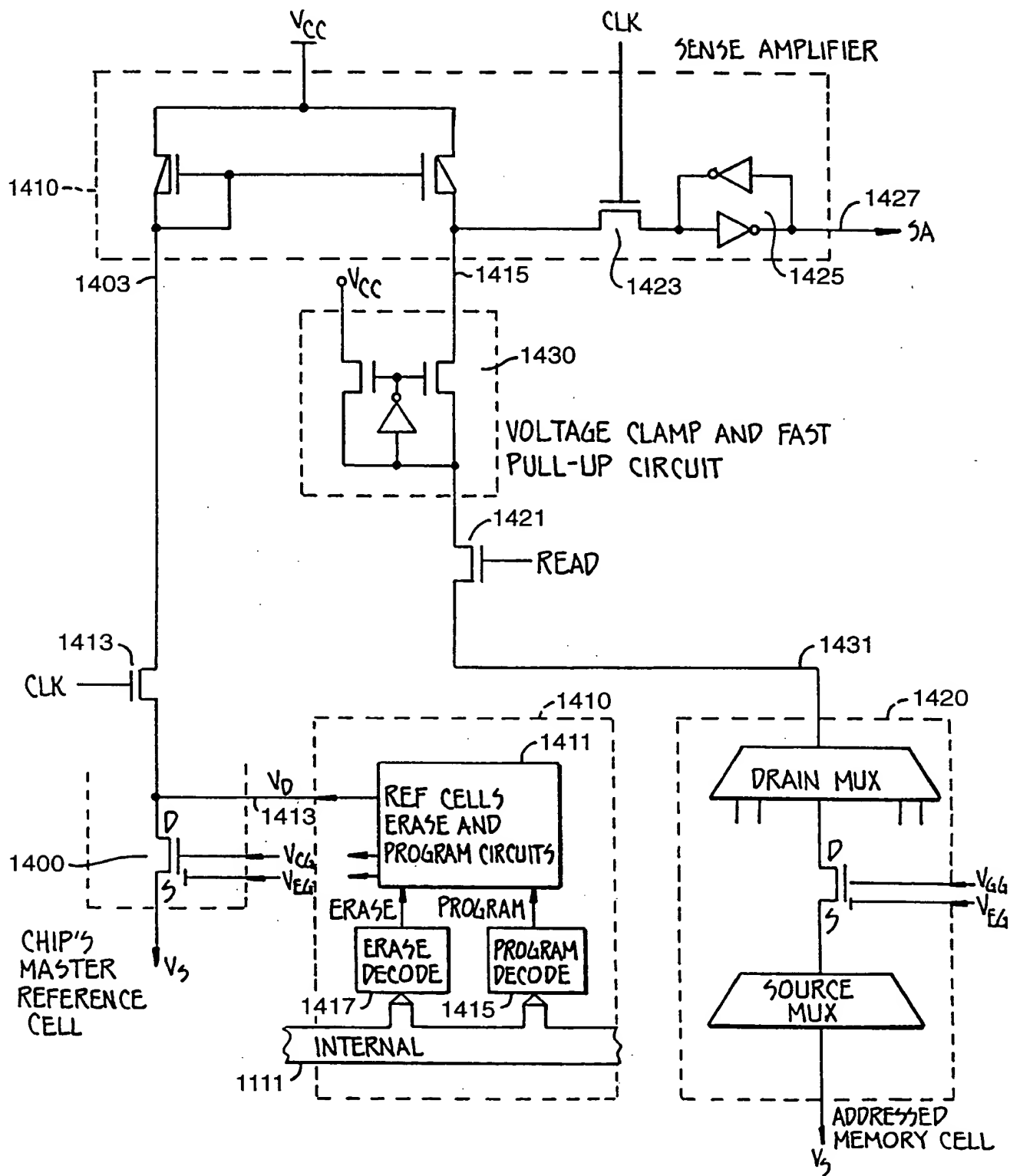


FIG. 17A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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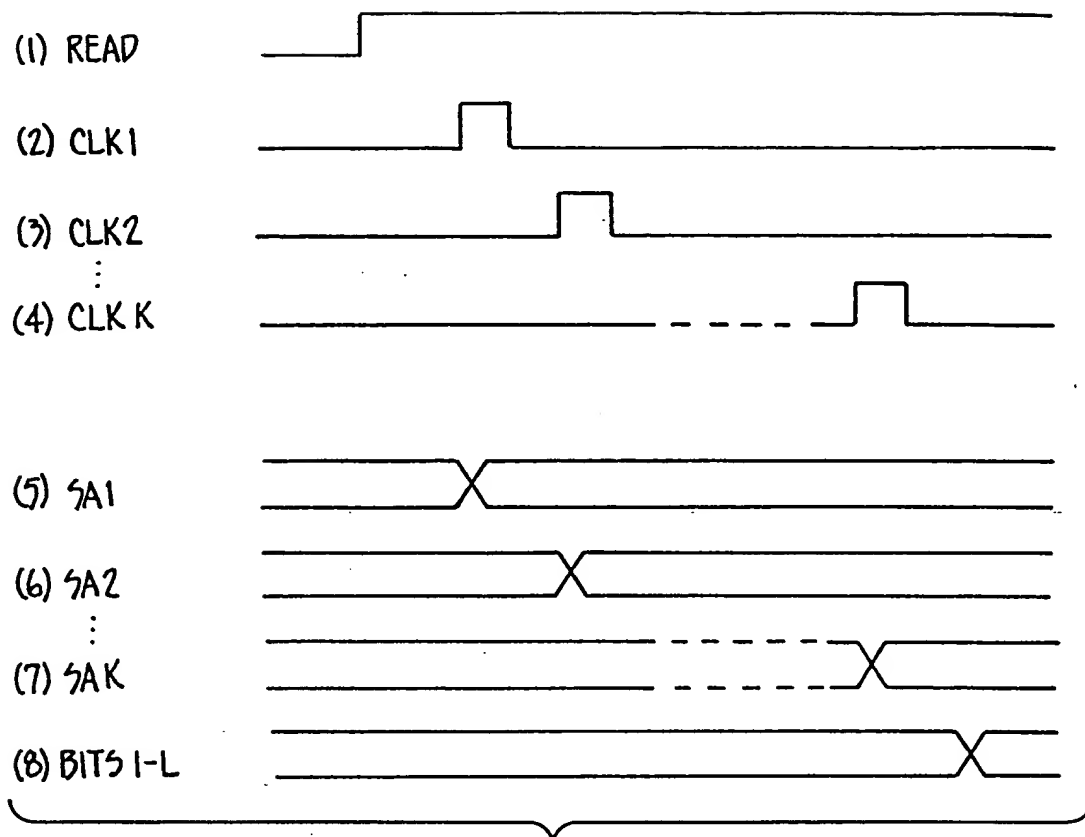


FIG. 17C

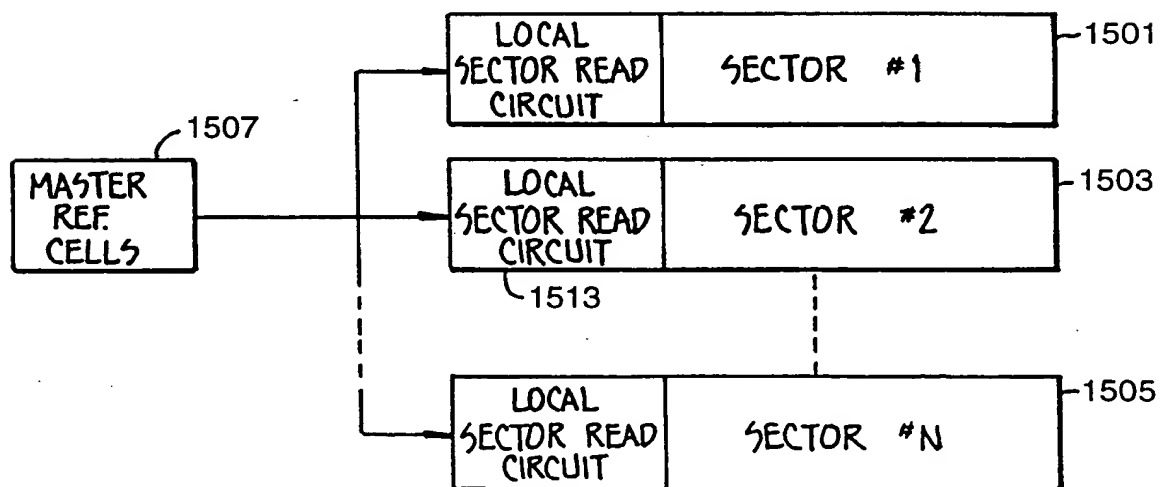


FIG. 18

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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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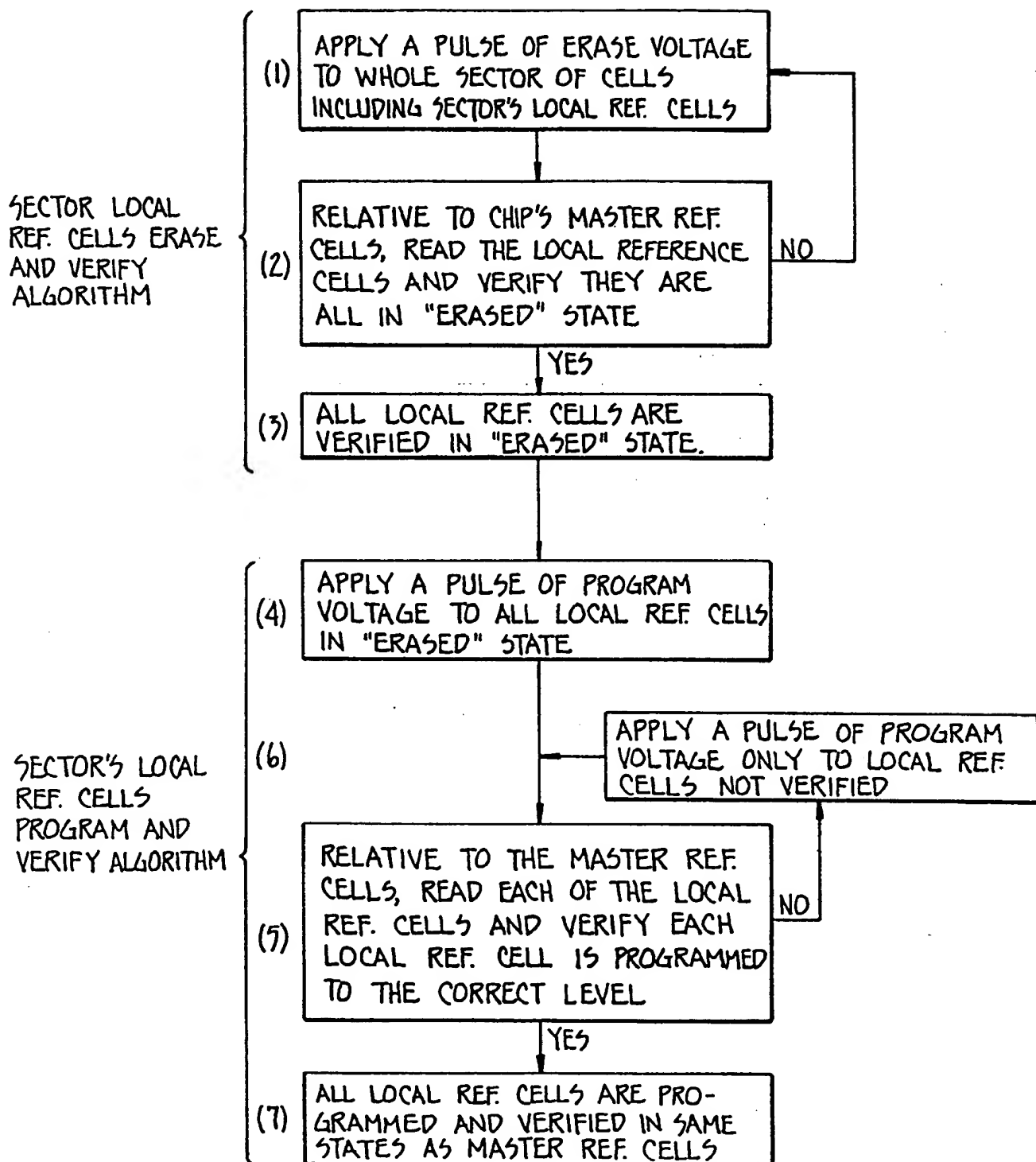


FIG. 19

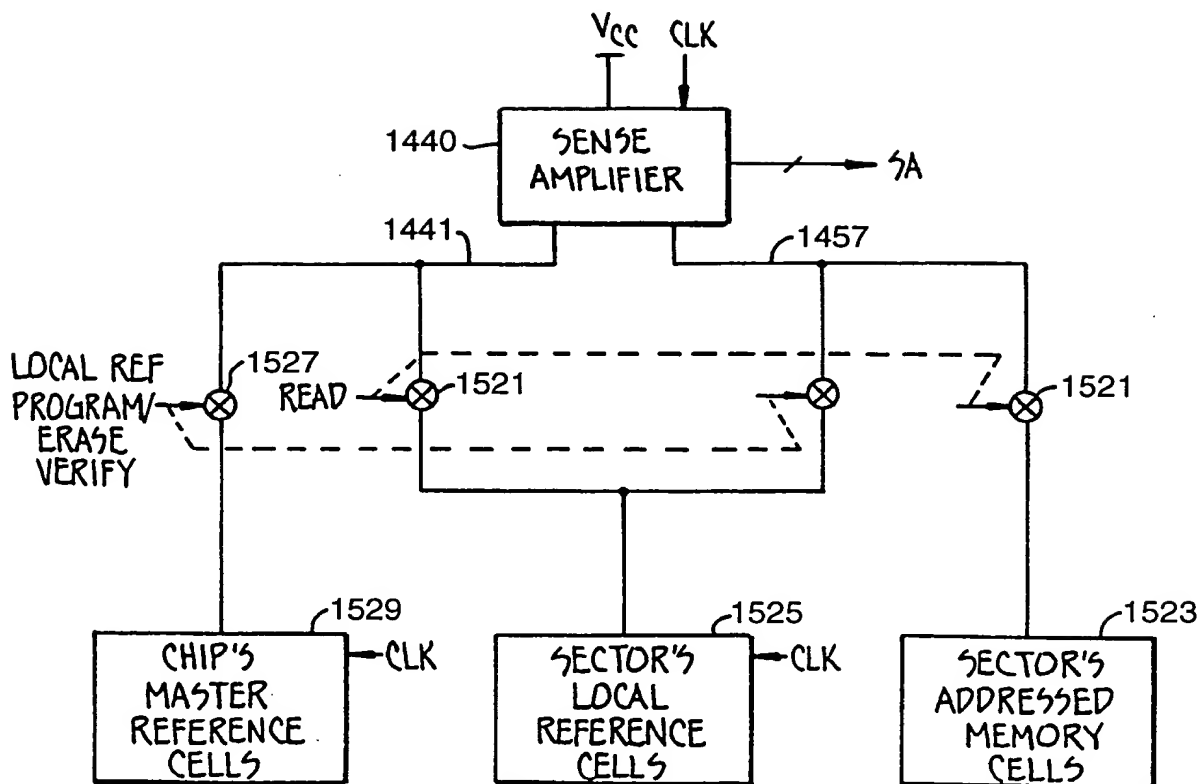


FIG. 20A

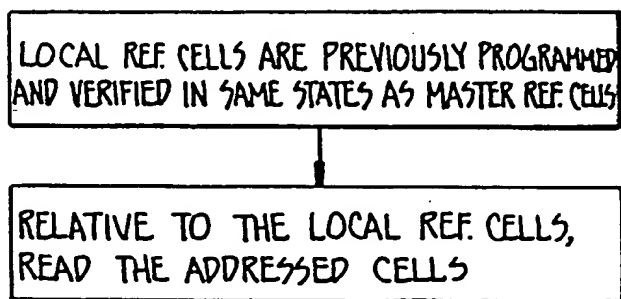
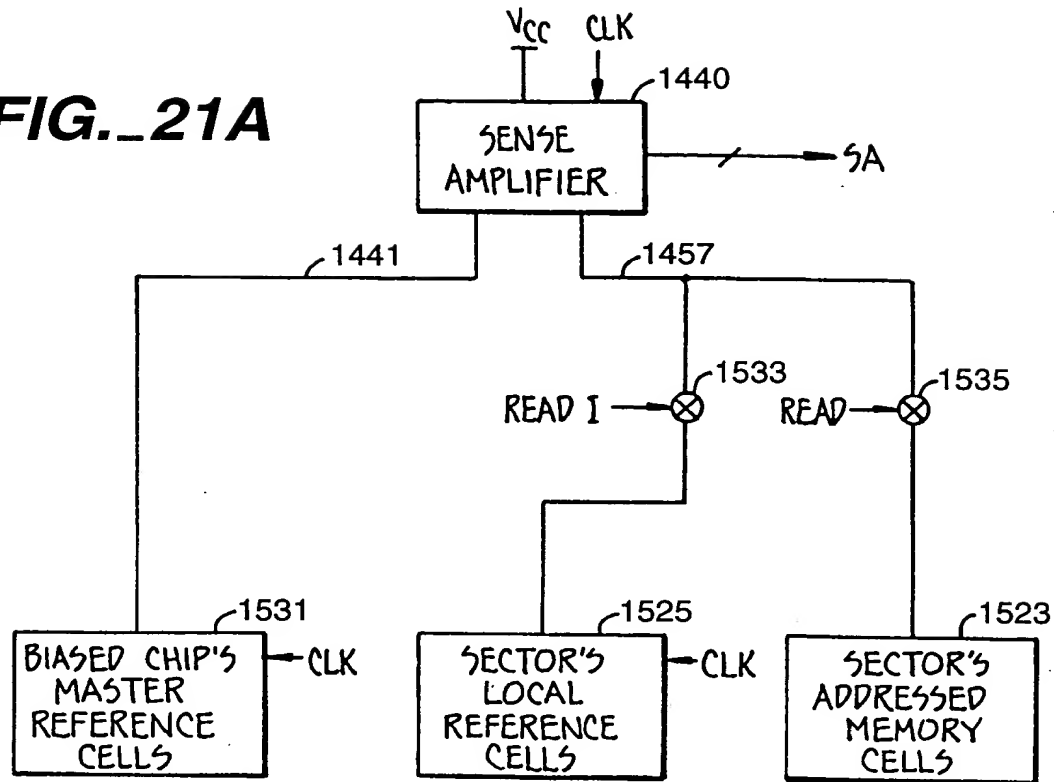


FIG. 20B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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FIG. 21A



- (1) LOCAL REF. CELLS ARE PREVIOUSLY PROGRAMMED AND VERIFIED IN SAME STATES AS MASTER REF. CELLS
- (2) RELATIVE TO THE LOCAL REFERENCE CELLS READ THE MASTER REF. CELLS
- (3) DETERMINE THE DIFFERENCES, IF ANY AND BIAS. THE MASTER REF CELLS' CURRENTS SUCH THAT THE SAME READING IS OBTAINED RELATIVE TO THE BIASED MASTER REF. CELLS AS RELATIVE TO THE LOCAL REF. CELLS
- (4) RELATIVE TO THE BIASED MASTER REF. CELLS, READ THE ADDRESSED CELLS

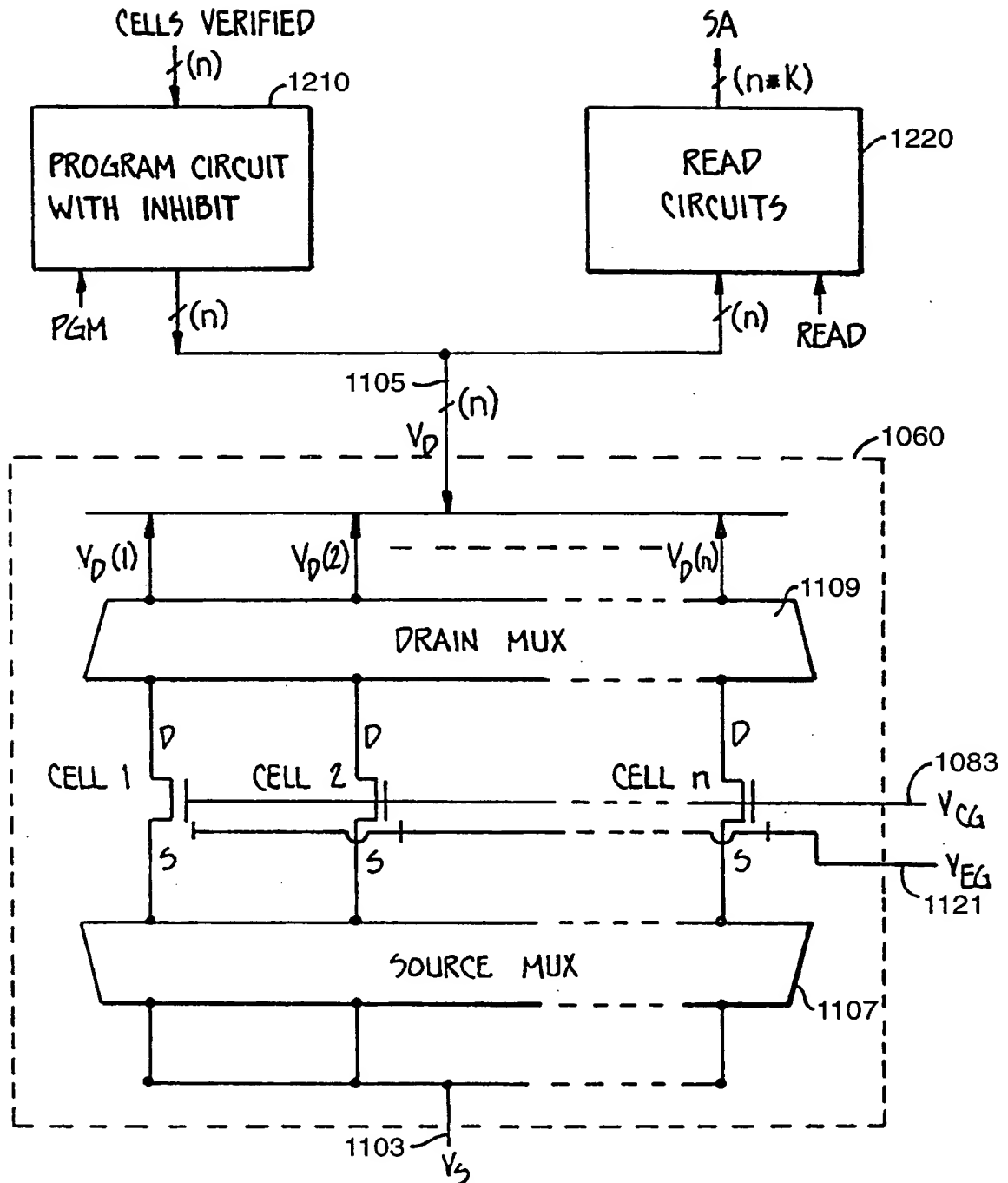
FIG. 21D

TO SENSE AMPLIFIER



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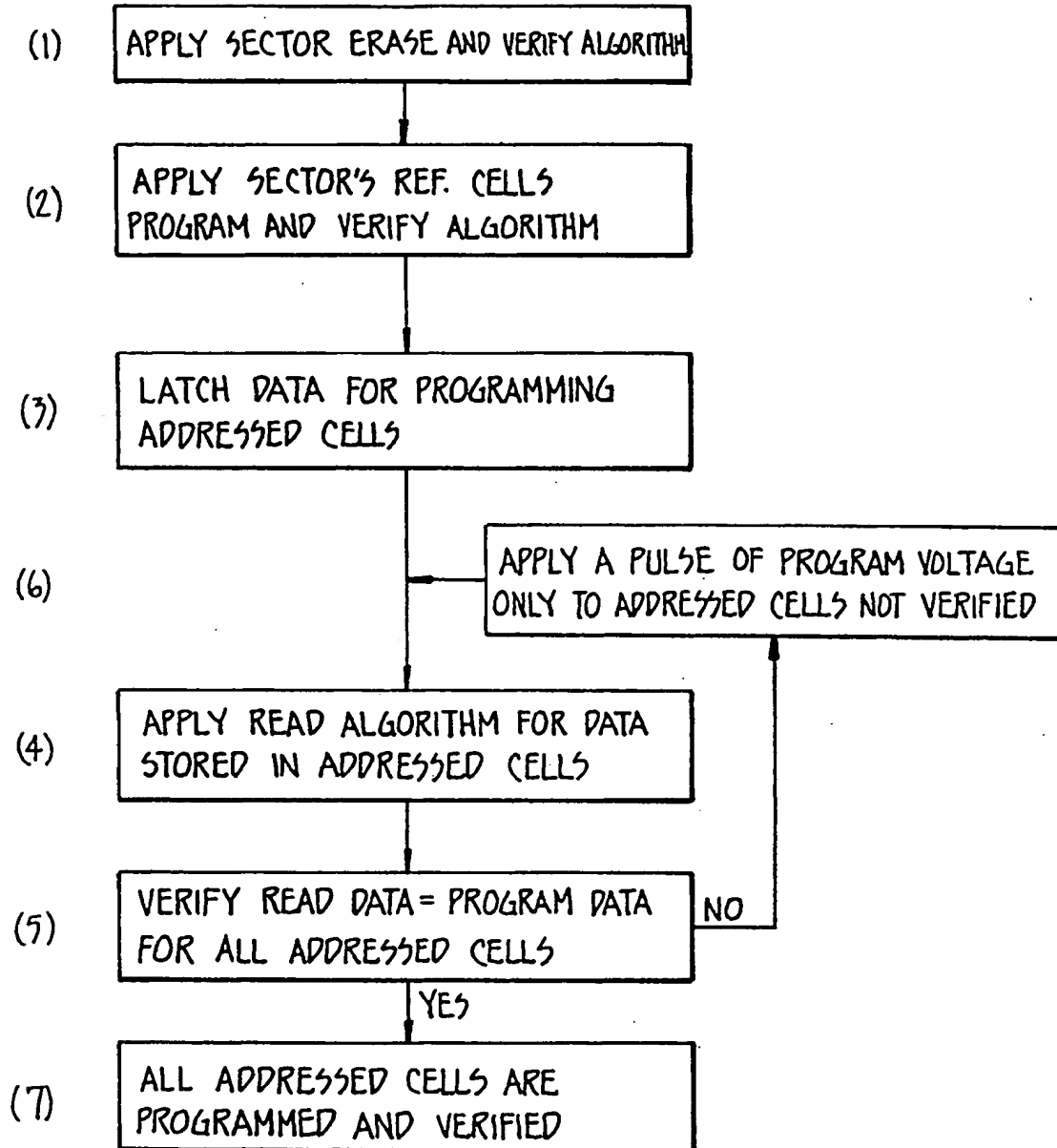


READ/PROGRAM DATA PATHS FOR n CELLS IN PARALLEL

FIG. 22

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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PROGRAM ALGORITHM

FIG. 23

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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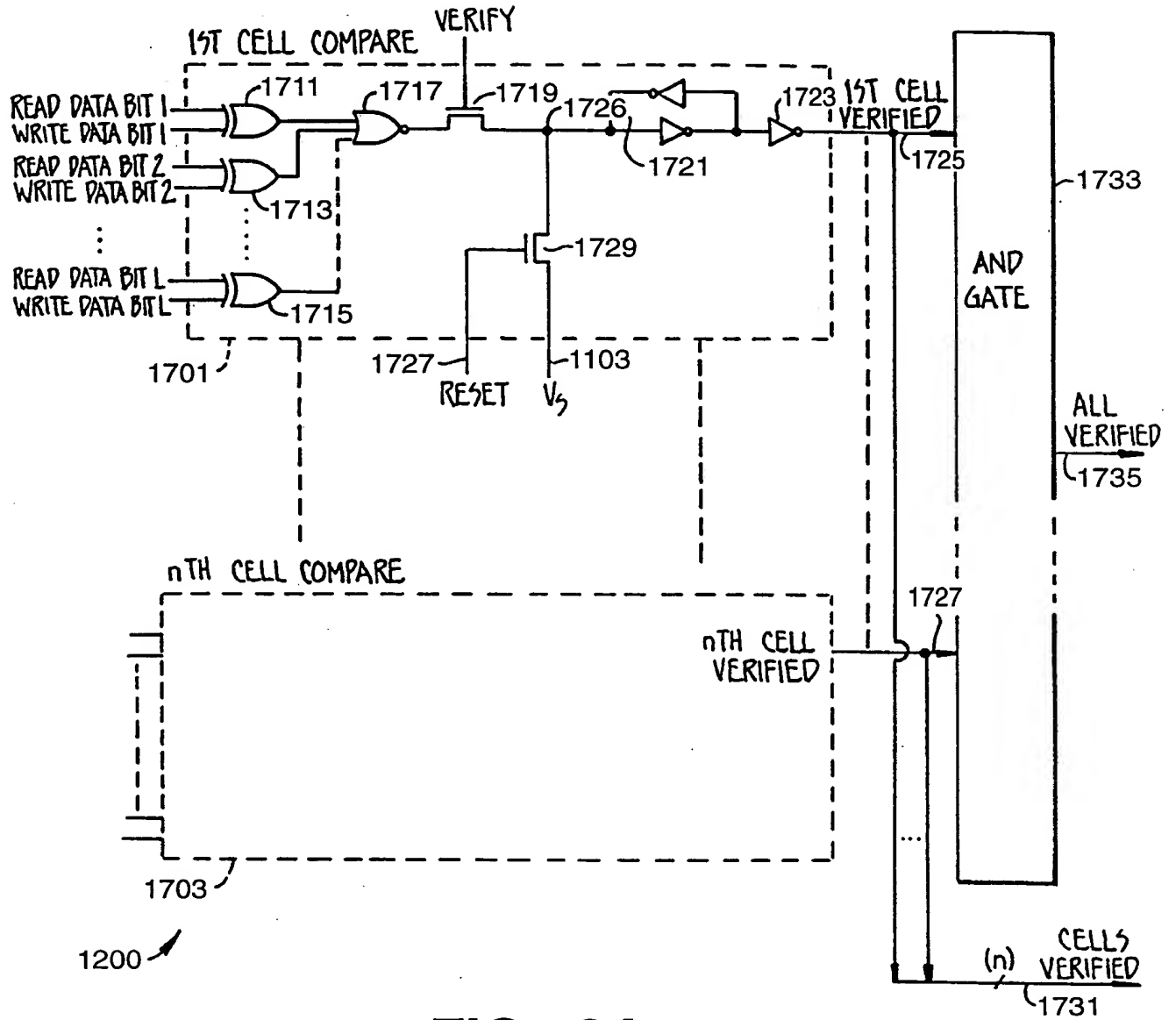


FIG. 24

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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	SELECTED CONTROL GATE V_{CG}	DRAIN V_D	SOURCE V_S	ERASE GATE V_{EG}
READ	V_{PG}	V_{REF}	V_{SS}	V_E
PROGRAM	V_{PG}	V_{PD}	V_{SS}	V_E
PROGRAM VERIFY	V_{PG}	V_{REF}	V_{SS}	V_E
ERASE	V_{PG}	V_{REF}	V_{SS}	V_E
ERASE VERIFY	V_{PG}	V_{REF}	V_{SS}	V_E

TABLE 1

FIG._26

(TYPICAL VALUES)	READ	PROGRAM	PROGRAM VERIFY	ERASE	ERASE VERIFY
V_{PG}	V_{CC}	12V	$V_{CC}+5V$	V_{CC}	$V_{CC}-5V$
V_{CC}	5V	5V	5V	5V	5V
V_{PD}	V_{SS}	8V	8V	V_{SS}	V_{SS}
V_E	V_{SS}	V_{SS}	V_{SS}	20V	V_{SS}
UNSELECTED CONTROL GATE	V_{SS}	V_{SS}	V_{SS}	V_{SS}	V_{SS}
UNSELECTED BIT LINE	V_{REF}	V_{REF}	V_{REF}	V_{REF}	V_{REF}

$V_{SS}=0V$, $V_{REF}=1.5V$, $5V=0.5V-1V$

TABLE 2

FIG._27

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